

Application No. 10/776,966
Amendment dated August 3, 2005
Reply to Office Action of February 9, 2005

REMARKS

Claims 1-21 are pending and are at issue.

Claims 1, 2, 8, 9, 11, 16, 20 and 21 stand rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 2,950,713 to Sterick. Claims 12-15, 17-19 stand rejected under 35 U.S.C. §103(a) as unpatentable over Sterick. Claims 1-10 stand rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 6,164,273 to Waters in view of Sterick.

The rejections, as they may apply to the claims presented herein, are respectfully traversed.

Claim 1 is directed to a heating apparatus having a heating head, a burner assembly and a plurality of elongate flue chambers formed by external and internal wall portions of the heating head. As amended, claim 1 calls for the wall portions to be of predetermined material. Claim 1 further requires insulation material that is distinct from the material of the wall portions and disposed against and along the internal wall portions so that the insulation material maximizes heat transfer from the hot combustion gases radially outward to the external wall portions and minimizes heat transfer radially inward from the inner wall portions. None of the cited art discloses or suggests the heating head flue chambers and insulation material as set forth in amended claim 1.

The '713 patent to Sterick is exactly the prior art over which the heating apparatus of claim 1 is a substantial improvement in terms of the heating efficiencies thereof. In fact, the '713 patent is discussed in the Background section on page 2 of the subject application. To this end, Sterick clearly lacks the insulation material called for in amended claim 1. In the Action, it is asserted that the outer layer of inner wall 6 of Sterick is deemed to be insulative. However, no such disclosure is provided by Sterick, and any inference in this regard is completely based on teachings provided by applicant in the present application and unwarranted by the explicit teachings of Sterick. Sterick only discusses the casing 1 as including a baffle 6 which is shown best in FIG. 5 of Sterick. The baffle 6 may correspond to

the recited internal wall portions that cooperate to form the flue chambers of claim 1. However, the wall cannot also be the recited insulation material which is distinct from the material of the wall portions and is disposed against and along the internal wall portions, as required by amended claim 1.

The '273 patent to the present applicant does not show internal wall portions and insulation material that are made from distinct materials with the insulation material disposed against and along head internal wall portions, as called for in amended claim 1. Instead, the '273 patent discloses an emitter assembly 202 that includes an outer emitter grid 204 and inner cone member 210 that is of insulative material which cooperate to form an inclined annulus (column 9, lines 57-62). In this patent, Waters does not disclose or suggest placing the inner cone member against an inner wall portion, as required in claim 1. In fact, no such dual wall configuration for flues as required in amended claim 1 is present in the Waters emitter assembly 202. As discussed earlier, Sterick does not cure these deficiencies in the teachings of the '273 patent with respect to the recited wall portions and insulation material of claim 1. Accordingly, it is believed claim 1, and claims 2-10 which depend cognately therefrom, are allowable over the relied upon art.

Claim 11 is directed to a heating apparatus having a heating head, a burner assembly and a plurality of substantially isolated flue chambers configured to confine flow of the combustion gases therein to generate turbulent flow for maximizing heat transfer from the gas flow to the heating head. As amended, claim 11 calls for a dome cover member over the heating head extending radially outward from the central axis and downward along the heating head for reflecting stray radiant heat generated by the head. Amended claim 11 also calls for an open top of the heating head to avoid generating excessive heat energy via the turbulent flow of combustion gases in the flue chambers, and a vertical space between the dome cover member and open top of the head to permit the combustion gases to escape therefrom. Sterick does not disclose or suggest the provision, configuration and/or

arrangement of the flue chambers, dome cover member and heating head as called in amended claim 11.

More particularly, Sterick lacks a dome cover member, an open top of the heating head, and a vertical space between the dome cover member and open top of the heating head, as required in amended claim 11 (also see paragraph [0028] in application for support). As recited, each of these features contributes to the ability to configure the flue chambers so that they generate turbulent flow of the combustion gases therein. In this regard, the open top of the heating head avoids generating excessive heat energy by the turbulent flow of combustion gases in the flue chambers, and similarly the vertical space between the dome cover member and open top of the head permits the combustion gases to escape therefrom, as set forth in amended claim 11. By contrast, Sterick substantially closes off the top of the casing 1 with cover assemblies including the cover 9 and radiants 12 of FIG. 1, the cover 9 and insulating material 13 of FIG. 2, and the cover 9 and corrugated steel sheets 14 of FIG. 3. Rather than being provided with an open top, the casings of FIGS. 1-3 have covers 9 with small vents 9a with the remainder of the cover assemblies designed to radiate the heat back in a downward direction in the flue chambers (column 1, lines 57-70). As is apparent, Sterick has not considered the type of flow in the flues 8, and thus likewise has not considered the claimed structure that allows for effective use of turbulent flow in the flue chambers where the heating apparatus also has a superimposed dome cover member over the heating head, as in the heating apparatus of amended claim 11. Accordingly, it is believed amended claim 11, and claims 12-21 which depend cognately therefrom, are allowable over Sterick.

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Based on the foregoing, reconsideration and allowance of claims 1-21 are respectfully requested.

Respectfully submitted,

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